

## CLAIMS

What is claimed is:

1. In a current probe measurement system having a current measurement probe generating a current output signal via transformer action with a current carrying signal conductor and a Hall Effect device disposed in the core of the transformer, a constant input impedance AC circuit for coupling the current output signal from a current measurement probe to a resistive terminating element of a low input impedance measurement instrument comprising:
  - a capacitor coupling the current output signal of the current measurement probe to the low input impedance measurement instrument where the capacitor forms part of a resistive-capacitive network including the resistive terminating element, with the resistive-capacitive network having a low frequency cutoff and a RC time constant; and
  - a resistive-inductive network having a synthesized inductor with a high inductive value, large current carrying capacity and an L/R time constant equal to the RC time constant of the resistive capacitive network coupled to receive the current output signal from the current measurement probe for terminating DC and low frequency signal components of the current output signal below the low frequency cutoff of the resistive-capacitive network in the same low input impedance of the measurement instrument and providing a current path for shunting the DC and low frequency signal components to prevent transformer saturation of the current measurement probe.
2. The constant input impedance AC coupling circuit as recited in claim 1 wherein the synthesized inductor comprises a generalized impedance converter.
3. The constant input impedance AC coupling circuit as recited in claim 1 wherein the generalized impedance converter comprises a gyrator.
4. The constant input impedance AC coupling circuit as recited in claim 1 an isolation inductor coupled between current output signal and the resistive-inductive network.